L18 ANSWER 8 OF 12 USPATFULL on STN
AN 95:9739 USPATFULL
TI **Alkali** or **alkaline earth metal** promoted **catalyst** and a process for methanol synthesis using **alkali** or **alkaline earth metals** as promoters
IN Tierney, John W., Pittsburgh, PA, United States
Wender, Irving, Pittsburgh, PA, United States
Palekar, Vishwesh M., Pittsburgh, PA, United States
PA University of Pittsburgh, Pittsburgh, PA, United States (U.S. corporation)
PI US 5385949 19950131
AI US 1993-22821 19930224 (8)
DCD 20120124
RLI Continuation of Ser. No. US 1992-823127, filed on 21 Jan 1992, now abandoned which is a division of Ser. No. US 1991-675140, filed on 26 Mar 1991, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Mars, Howard T.
LREP Reed Smith Shaw & McClay
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 644
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a novel route for the synthesis of methanol, and more specifically to the production of methanol by contacting synthesis gas under relatively mild conditions in a slurry phase with a heterogeneous **catalyst** comprising reduced **copper** chromite impregnated with an **alkali** or **alkaline earth metal**. There is thus no need to add a separate **alkali** or **alkaline earth** compound. The present invention allows the synthesis of methanol to occur in the temperature range of approximately 100.degree.-160.degree. C. and the pressure range of 40-65 atm. The process produces methanol with up to 90% syngas conversion per pass and up to 95% methanol selectivity. The only major by-product is a small amount of easily separated methyl **formate**. Very small amounts of water, carbon dioxide and dimethyl ether are also produced. The present **catalyst** combination also is capable of tolerating fluctuations in the H.sub.2 /CO ratio without major deleterious effect on the reaction rate. Furthermore, carbon dioxide and water are also tolerated without substantial **catalyst** deactivation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 9 OF 12 USPATFULL on STN
AN 95:7900 USPATFULL
TI Methanol synthesis using a **catalyst** combination of **alkali** or **alkaline earth** salts and reduced **copper** chromite
IN Tierney, John W., Pittsburgh, PA, United States
Wender, Irving, Pittsburgh, PA, United States
Palekar, Vishwesh M., Pittsburgh, PA, United States
PA University of Pittsburgh, Pittsburgh, PA, United States (U.S. corporation)
PI US 5384335 19950124
AI US 1993-40644 19930331 (8)
RLI Division of Ser. No. US 1991-675139, filed on 26 Mar 1991, now patented, Pat. No. US 5221652
DT Utility
FS Granted

EXNAM Primary Examiner: Mars, Howard T.
LREP Reed Smith Shaw & McClay
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 709
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a novel route for the synthesis of methanol, and more specifically to the production of methanol by contacting synthesis gas under relatively mild conditions in a slurry phase with a **catalyst** combination comprising reduced **copper** chromite and basic **alkali** salts or **alkaline earth** salts. The present invention allows the synthesis of methanol to occur in the temperature range of approximately 100.degree.-160.degree. C. and the pressure range of 40-65 atm. The process produces methanol with up to 90% syngas conversion per pass and up to 95% methanol selectivity. The only major by-product is a small amount of easily separated methyl **formate**. Very small amounts of water, carbon dioxide and dimethyl ether are also produced. The present **catalyst** combination also is capable of tolerating fluctuations in the H.sub.2 /CO ratio without major deleterious effect on the reaction rate. Furthermore, carbon dioxide and water are also tolerated without substantial **catalyst** deactivation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 10 OF 12 USPATFULL on STN
AN 94:28938 USPATFULL
TI Process for preparing **alcohols**
IN Radlowski, Cecelia A., Riverside, IL, United States
PA Amoco Corporation, Chicago, IL, United States (U.S. corporation)
PI US 5300695 19940405
AI US 1992-986384 19921207 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Mars, Howard T.
LREP McDonald, Scott P., Kretchmer, Richard A.
CLMN Number of Claims: 17
ECL Exemplary Claim: 1,13
DRWN 1 Drawing Figure(s); 1 Drawing Page(s)
LN.CNT 774
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process is provided in which an **alcohol** having X carbon atoms is reacted over an L-type zeolite **catalyst** to produce a higher molecular weight **alcohol**. In some embodiments, a first **alcohol** having X carbon atoms is condensed with a second **alcohol** having Y carbon atoms to produce a branched-chain **alcohol** having X+Y carbon atoms. Processes for making ethers useful as fuel oxygenates which incorporate the foregoing process steps also are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 11 OF 12 USPATFULL on STN
AN 93:50523 USPATFULL
TI Methanol synthesis using a **catalyst** combination of **alkali** or **alkaline earth** salts and reduced **copper** chromite for methanol synthesis
IN Tierney, John W., Pittsburgh, PA, United States
Wender, Irving, Pittsburgh, PA, United States
Palekar, Vishwesh M., Pittsburgh, PA, United States
PA The University of Pittsburgh, Pittsburgh, PA, United States (U.S. corporation)
PI US 5221652 19930622

AI US 1991-675139 19910326 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Shine, W. J.
LREP Reed Smith Shaw & McClay
CLMN Number of Claims: 22
ECL Exemplary Claim: 1,11
DRWN No Drawings
LN.CNT 673
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention relates to a novel route for the synthesis of methanol, and more specifically to the production of methanol by contacting synthesis gas under relatively mild conditions in a slurry phase with a **catalyst** combination comprising reduced **copper** chromite and basic **alkali** salts or **alkaline earth** salts. The present invention allows the synthesis of methanol to occur in the temperature range of approximately 100.degree.-160.degree. C. and the pressure range of 40-65 atm. The process produces methanol with up to 90% syngas conversion per pass and up to 95% methanol selectivity. The only major by-product is a small amount of easily separated methyl **formate**. Very small amounts of water, carbon dioxide and dimethyl ether are also produced. The present **catalyst** combination also is capable of tolerating fluctuations in the H.sub.2 /CO ratio without major deleterious effect on the reaction rate. Furthermore, carbon dioxide and water are also tolerated without substantial **catalyst** deactivation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 6 OF 12 USPATFULL on STN
AN 2000:91896 USPATFULL
TI **Catalyst** combination and process for the low-temperature co-production of methanol and methyl **formate** in liquid phase
IN Wu, Yutang, Chengdu, China
Luo, Shizhong, Chengdu, China
Liu, Xingquan, Chengdu, China
Chen, Wenkai, Chengdu, China
Jia, Chaoxia, Chengdu, China
Li, Shunfen, Chengdu, China
Yu, Zuolong, Chengdu, China
PA Chengdu Institute of Organic Chemisty, Chinese Academy of Sciences, Chengdu, China (non-U.S. corporation)
PI US 6090741 20000718
AI US 1998-145735 19980902 (9)
PRAI CN 1997-107662 19970902
DT Utility
FS Granted
EXNAM Primary Examiner: Wood, Elizabeth D.
LREP Schwegman, Lundberg, Woessner & Kluth, P.A.
CLMN Number of Claims: 9
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 680
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a novel **catalyst** combination and a novel ocess for the synthesis of methanol and methyl **formate** (MF), and more specifically to the production of methanol and MF by contacting syngas under relatively mild conditions in a slurry phase with the novel **catalyst** combination comprising unreduced **copper** chromite prepared using specifical method, **alkali** alcoholates, a nonionics and a non-polar solvent. The nonionics, for example, C.sub.8 H.sub.17 --(C.sub.6 H.sub.4)--O--(C.sub.2 H.sub.4 O).sub.n H (where n is between 4 and 60) is used in the amount that is at least 5 vol. % of the slurry (liquid reaction medium). And the non-polar solvent having a dielectricity constant between 2 and 3 at 20.degree. C. is used in the amount that is at least 50 vol. % of the slurry. The present invention allows the synthesis of methanol and MF to occur in the temperature range of approximately 100-150.degree. C., and the pressure range of 3-8 MPa. The process produces methanol and MF with up to 95% syngas conversion per pass and up to 99% selectivity to methanol and MF. Very small amount of water, carbon dioxide and dimethyl ether is also produced. A space-time-yield of 88.3 gms./L/h is achieved when using a continuous stirring tank reactor(CSTR). A tubular slurry reactor of 10 liter volume without any mechanical agitator has been successfully used. The present **catalyst** combination also is capable of tolerating fluctuations in the H.sub.2 /CO ratio without major deleterious effect on the reaction rate. Furthermore, carbon dioxide and water are also tolerated without substantial **catalyst** deactivation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 1 OF 12 USPATFULL on STN
AN 2003:100346 USPATFULL
TI Preparation and use of non-chrome **catalysts** for **Cu** /Cr **catalyst** applications
IN Chen, Jianping, Erie, PA, UNITED STATES
PI US 2003069457 A1 20030410
AI US 2002-196443 A1 20020716 (10)
RLI Division of Ser. No. US 1998-142987, filed on 18 Sep 1998, GRANTED, Pat. No. US 6455464 A 371 of International Ser. No. WO 1997-US4678, filed on 21 Mar 1997, PENDING
PRAI US 1996-13824P 19960321 (60)
DT Utility
FS APPLICATION
LREP Polster, Lieder, Woodruff & Lucchesi, L.C., Suite 230, 763 South New Ballas Road, St. Louis, MO, 63141
CLMN Number of Claims: 58
ECL Exemplary Claim: 1
DRWN 6 Drawing Page(s)
LN.CNT 1271
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A non-chrome, **copper**-containing **catalyst**, **Cu** --Al--O and method of preparing the same are provided wherein the **Cu**--Al--O **catalyst** is prepared by the co-precipitation of **copper** nitrate (**Cu**(NO.sub.3).sub.2) and sodium aluminate (Na.sub.2Al.sub.2O.sub.4) solutions using sodium carbonate (Na.sub.2CO.sub.3) as a precipitant. The precipitate is filtered, washed to removed excess sodium, and dried. The dried product, to be used in a powder **form**, is calcined at a preferred temperature of approximately 700.degree. to 900.degree. C. for approximately 1 to 4 hours. The dry powder, to be tableted or extruded, is calcined at a temperature of approximately 400.degree. to 700.degree. C. The activity of the **Cu**--Al--O **catalyst** can be promoted in **hydrogenolysis** applications by the addition of various agents. The **Cu**--Al--O **catalyst** can be employed in applications in place of **Cu**/Cr, or other **copper** based **catalysts**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 2 OF 12 USPATFULL on STN
AN 2002:246694 USPATFULL
TI Preparation and use of non-chrome **catalysts** for **Cu** /Cr **catalyst** applications
IN Chen, Jianping, Erie, PA, United States
PA Engelhard Corporation, Iselin, NJ, United States (U.S. corporation)
PI US 6455464 B1 20020924
WO 9734694 19970925
AI US 1998-142987 19980918 (9)
WO 1997-US4678 19970321
19980918 PCT 371 date
PRAI US 1996-13824P 19960321 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wood, Elizabeth D.
LREP Polster, Lieder, Woodruff & Lucchesi
CLMN Number of Claims: 38
ECL Exemplary Claim: 1
DRWN 9 Drawing Figure(s); 6 Drawing Page(s)
LN.CNT 1053
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A non-chrome, **copper**-containing **catalyst**, **Cu** --Al--O and method of preparing the same are provided wherein the **Cu**--Al--O **catalyst** is prepared by the co-precipitation of **copper** nitrate (**Cu**(NO.sub.3).sub.2) and sodium

aluminate (Na.sub.2Al.sub.2O.sub.4) solutions using sodium carbonate (Na.sub.2CO.sub.3) as a precipitant. the precipitate is filtered, washed to remove excess sodium, and dried. The dried product, to be used in a powder **form**, is calcined at a preferred temperature of approximately 700 to 900.degree. C. for approximately 1 to 4 hours. The dry powder, to be tableted or extruded, is calcined at a temperature of approximately 400 to 700.degree. C. The activity of the **Cu** --Al--O **catalyst** can be promoted in **hydrogenolysis** applications by the addition of various agents. The **Cu**--Al--O **catalyst** can be employed in applications in place of **Cu** /Cr, or other **copper**-based **catalysts**.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 4 OF 12 USPATFULL on STN
AN 2001:194387 USPATFULL
TI Conversion reactions for organic compounds
IN Petit-Clair, Carine, Montesson, France
Didillon, Blaise, Rueil Malmaison, France
Uzio, Denis, Marly Le Roi, France
PA Institut Francais du petrole. (non-U.S. corporation)
PI US 2001036902 A1 20011101
US 6482997 B2 20021119
AI US 2000-726031 A1 20001130 (9)
RLI Division of Ser. No. US 1999-373228, filed on 12 Aug 1999, ABANDONED
PRAI FR 1998-10347 19980812
DT Utility
FS APPLICATION
LREP MILLEN, WHITE, ZELANO & BRANIGAN, P.C., 2200 CLARENDON BLVD., SUITE 1400, ARLINGTON, VA, 22201
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 523
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In a **catalyst** process involving a conversion reaction for organic compounds, e.g. hydrogenations, the **catalyst** contains at least one support and at least one **metal**, and is characterized in that it has particles of an average size greater than approximately 1 nm, and more than 80% of particles, the size of which is comprised in the range D.+-.(D.0.2) where D represents the average size of the particles. The **catalyst** is prepared in a colloidal suspension, in aqueous phase, of the **metal** oxide or **metals** to be supported, then depositing this suspension on a support, and optionally reducing the oxide thus supported.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L18 ANSWER 5 OF 12 USPATFULL on STN
AN 2001:67611 USPATFULL
TI Noble **metal** support
IN Yamaguchi, Tatsuo, Ihara-Gun, Japan
Yamamatsu, Setsuo, Fuji, Japan
Okamoto, Hiroshige, Okayama, Japan
PA Asahi Kasei Kogyo Kabushiki Kaisha, Osaka, Japan (non-U.S. corporation)
PI US 6228800 B1 20010508
WO 9826867 19980625
AI US 1999-308838 19990526 (9)
WO 1997-JP4624 19971216
19990526 PCT 371 date
19990526 PCT 102(e) date
PRAI JP 1996-335817 19961216
DT Utility
FS Granted
EXNAM Primary Examiner: Wood, Elizabeth D.
LREP Birch, Stewart, Kolasch & Birch, LLP
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 1156
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A noble **metal**-supported article which comprises a carrier and a palladium-containing **metal** component supported on the carrier, which article has (A) a layer in which substantially no palladium is supported in the interior of the carrier and (B) a layer in which palladium is supported in the region from the outer surface to a depth of less than 100 .mu.m of the carrier.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L1 ANSWER 1 OF 2 USPATFULL on STN
AN 2003:18171 USPATFULL
TI Process for preparation of formate esters or methanol and catalyst therefor
IN Fujimoto, Kaoru, Kitakyushu-shi , Fukuoka, JAPAN
Tsubaki, Noritatsu, Tomaya-shi, Tomaya, JAPAN
Fujimoto, Kenichiro, Futtsu-shi, Chiba, JAPAN
PI US 2003013930 A1 20030116
AI US 2001-30368 A1 20011025 (10)
WO 2001-JP1386 20010223
PRAI JP 2000-500046 20000205
DT Utility
FS APPLICATION
LREP KENYON & KENYON, ONE BROADWAY, NEW YORK, NY, 10004
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 378
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A production process and a catalyst are provided, which can be less decreased in activity of the catalyst even when CO.sub.2, water and the like are present in the starting material and/or the reaction system, and which can produce a formic ester or a methanol at a low temperature and a low pressure.

The present invention relates to a process for producing **methanol**, comprising reacting **carbon monoxide** with an alcohol in the presence of an alkali metal-type catalyst, and/or an alkaline earth metal-type catalyst to produce a **formic ester**, wherein a hydrogenolysis catalyst of **formic ester** and hydrogen are allowed to be present together in the reaction system to hydrogenate the produced **formic ester** and thereby obtain a **methanol**.